Docker image creation:

<https://github.com/aramaraj/docks-python-image>

**Minikube Start**

minikube start

**Get Kubernetes cluster info :**

1. kubectl cluster-info

Kubernetes master is running at https://192.168.99.100:8443

KubeDNS is running at https://192.168.99.100:8443/api/v1/proxy/namespaces/kube-system/services/kube-dns

kubernetes-dashboard is running at https://192.168.99.100:8443/api/v1/proxy/namespaces/kube-system/services/kubernetes-dashboard

1. The above address would give unauthorized so you need to proxy with the

kubectl proxy --address="0.0.0.0"  --port=9090

1. in Broswser access the port using local host
2. <http://127.0.0.1:9090/api/v1/proxy/namespaces/kube-system/services/kubernetes-dashboard/#/pod?namespace=default>

**Create the Deployment:**

kubectl run docker-python-app --image=aramaraj/docker-python-app --port=5000

(this is very important and you might break your head. Make sure the application port exposed and this is same)

**kubectl get deployments**

m-C02S23PLG8WM:docker-python-app aramar1$ kubectl get deployments

NAME                DESIRED   CURRENT   UP-TO-DATE   AVAILABLE   AGE

docker-python-app   1         1         1            1           3m

**check the status of the pod created:**

m-C02S23PLG8WM:docker-python-app aramar1$ kubectl get pods -o wide

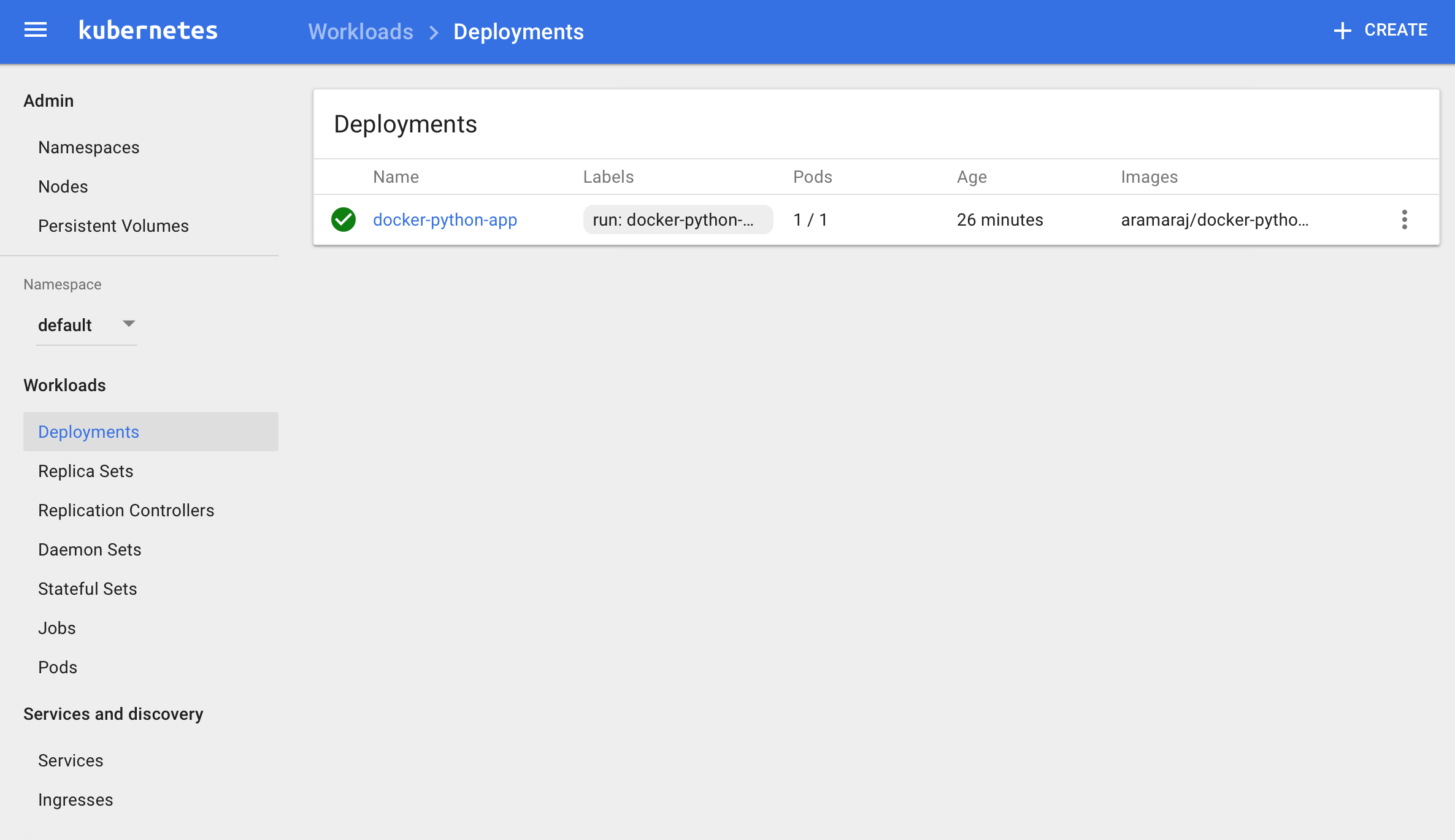
NAME                                 READY     STATUS    RESTARTS   AGE       IP           NODE

docker-python-app-3657222991-t5kb9   1/1       Running   0          3m        172.17.0.4   minikube

**Check the Events: (event log)**

kubectl get events

**Check the Deployment in Dash board:**

****

**Check the configuration:**

kubectl config view

m-C02S23PLG8WM:docker-python-app aramar1$ kubectl config view

apiVersion: v1

clusters:

- cluster:

    certificate-authority: /Users/aramar1/.minikube/ca.crt

    server: https://192.168.99.100:8443

  name: minikube

contexts:

- context:

    cluster: minikube

    user: minikube

  name: minikube

current-context: minikube

kind: Config

preferences: {}

users:

- name: minikube

  user:

    client-certificate: /Users/aramar1/.minikube/apiserver.crt

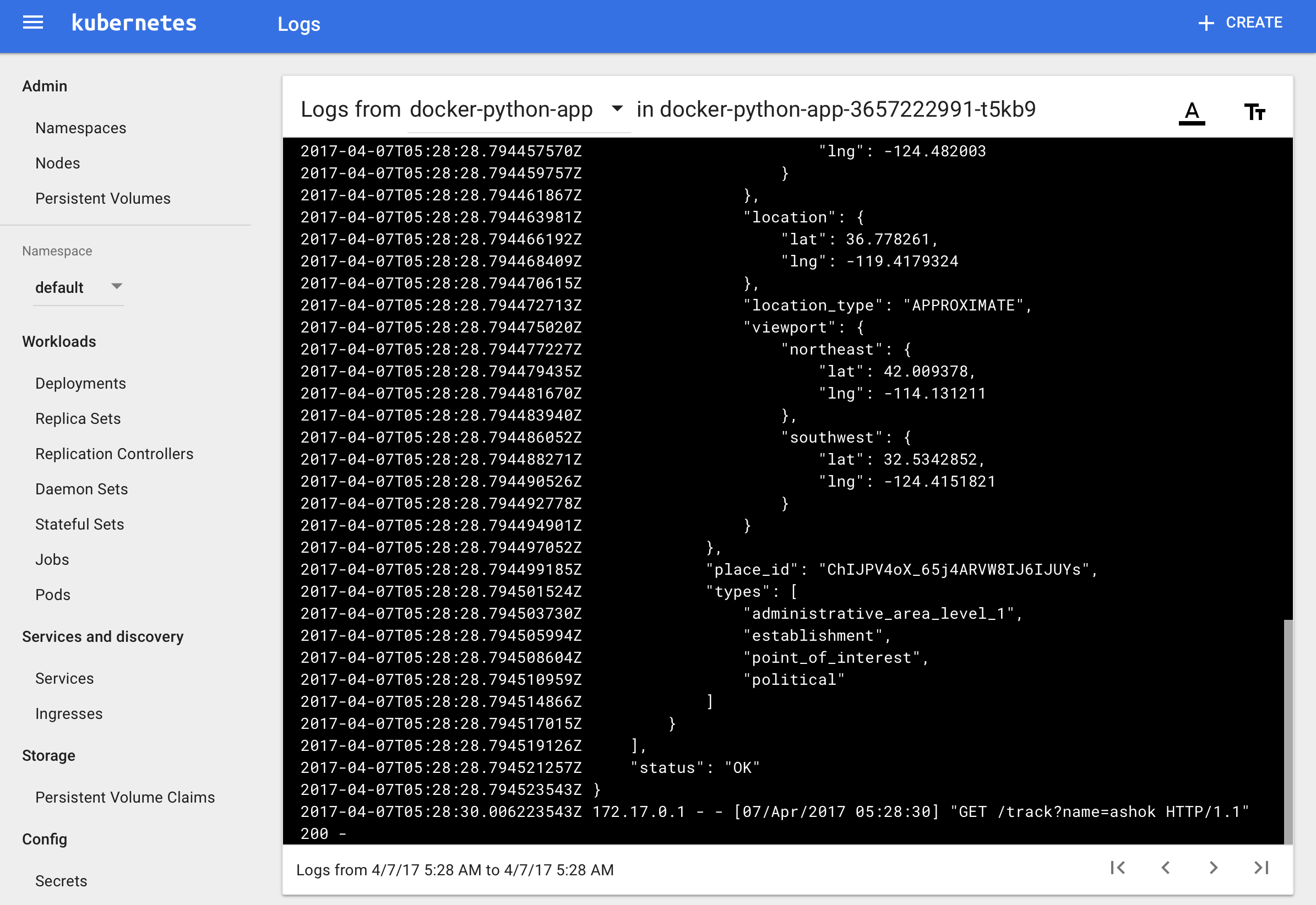
    client-key: /Users/aramar1/.minikube/apiserver.key

**Check if the application runs on the POD:**

m-C02S23PLG8WM:docker-python-app aramar1$ minikube ssh

$ curl 172.17.0.4:5000/track?name=6612

Location of the Delivery truck number 6612  is  315-317 N 10th St, San Jose, CA 95112, USA and Map URL is <http://maps.google.com/?q=37.345622600,-121.884722400>



**Create a Service to expose the service outside:**

Note we must use the *type=NodePort* because *minikube* doesn’t support the *LoadBalancer* service. We can check if the service was exposed by listing services:

m-C02S23PLG8WM:docker-python-app aramar1$ kubectl expose deployment docker-python-app  --type=NodePort

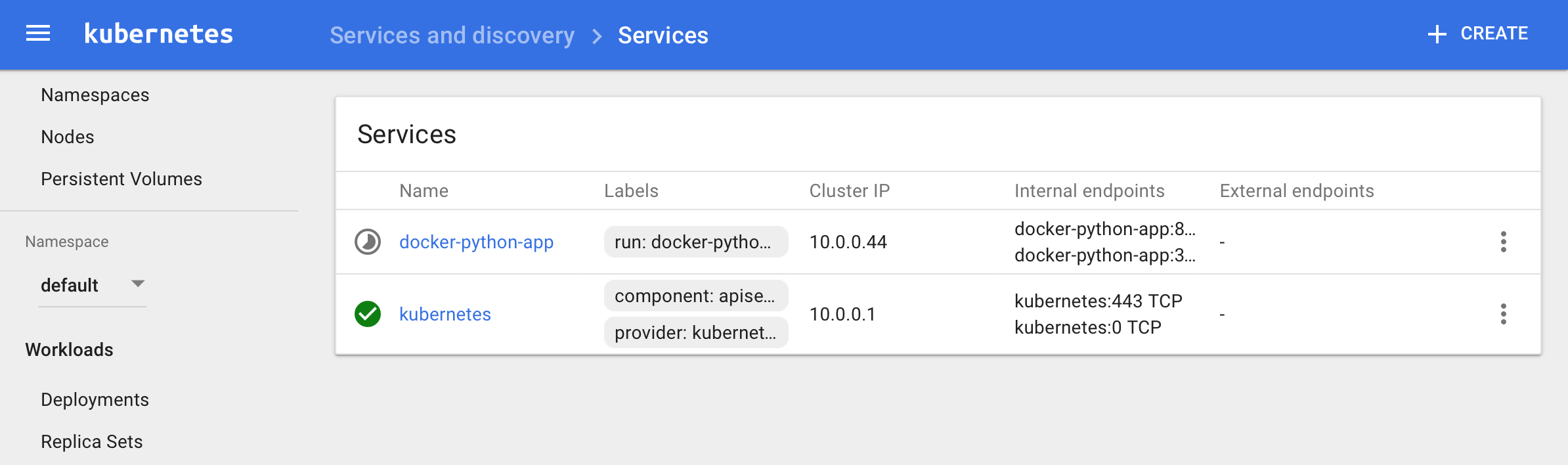
service "docker-python-app" exposed

m-C02S23PLG8WM:docker-python-app aramar1$

Get the services:

kubectl get svc

**Services Dash board:**



m-C02S23PLG8WM:kubernetes aramar1$ kubectl get svc

NAME         CLUSTER-IP   EXTERNAL-IP   PORT(S)        AGE

kubernetes   10.0.0.1     <none>        443/TCP        8h

web          10.0.0.34    <nodes>       80:30940/TCP   3m

**Get the Exposed Service URL:**

minikube service -n default --url docker-python-app

http://192.168.99.100:30587

**Kubernetes Scale:**

**Scale the deployment pod:**

m-C02S23PLG8WM:docker-python-app aramar1$ kubectl scale deployments/docker-python-app --replicas=3

deployment "docker-python-app" scaled

**get the deployments:**

m-C02S23PLG8WM:docker-python-app aramar1$ kubectl get deployments

NAME                DESIRED   CURRENT   UP-TO-DATE   AVAILABLE   AGE

docker-python-app   3         3         3            3           23m

**get pods**

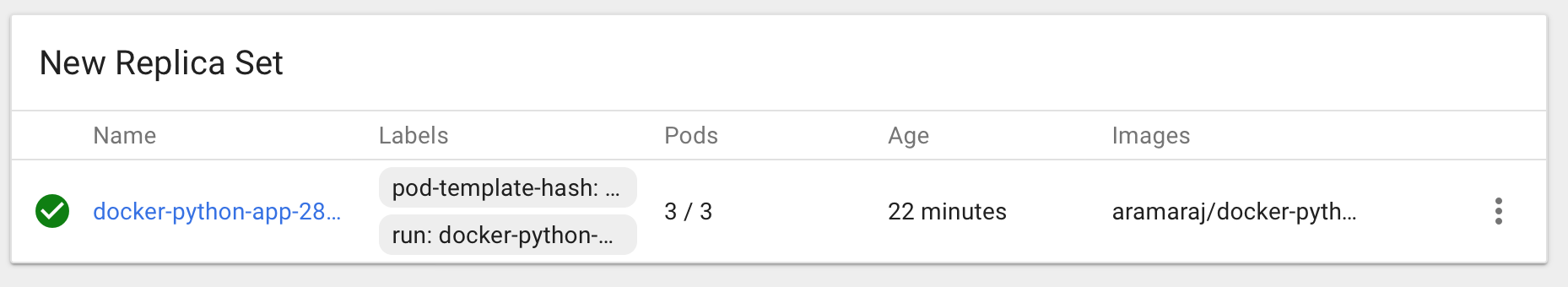
m-C02S23PLG8WM:docker-python-app aramar1$ kubectl get pods -o wide

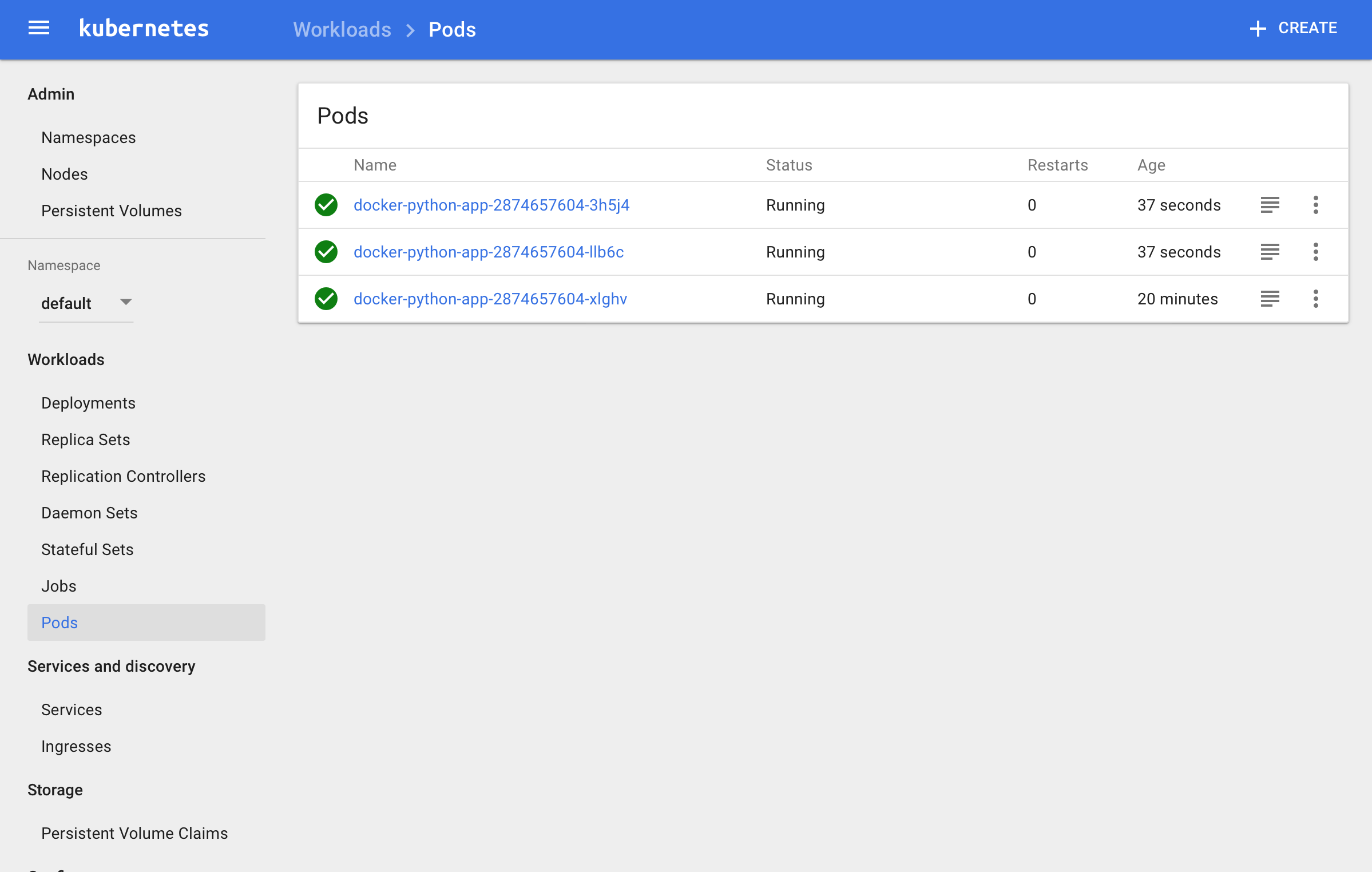
NAME                                 READY     STATUS    RESTARTS   AGE       IP           NODE

docker-python-app-2874657604-3h5j4   1/1       Running   0          4m        172.17.0.2   minikube

docker-python-app-2874657604-llb6c   1/1       Running   0          4m        172.17.0.5   minikube

docker-python-app-2874657604-xlghv   1/1       Running   0          24m       172.17.0.6   minikube





**Describe the Deployment:**

m-C02S23PLG8WM:docker-python-app aramar1$ kubectl describe deployments/docker-python-app

Name: docker-python-app

Namespace: default

CreationTimestamp: Fri, 07 Apr 2017 01:30:37 -0700

Labels: run=docker-python-app

Annotations: deployment.kubernetes.io/revision=3

Selector: run=docker-python-app

Replicas: 3 desired | 3 updated | 3 total | 3 available | 0 unavailable

StrategyType: RollingUpdate

MinReadySeconds: 0

RollingUpdateStrategy: 1 max unavailable, 1 max surge

Pod Template:

  Labels: run=docker-python-app

  Containers:

   docker-python-app:

    Image: aramaraj/docker-python-app

    Port: 5000/TCP

    Environment: <none>

    Mounts: <none>

  Volumes: <none>

Conditions:

  Type Status Reason

  ---- ------ ------

  Available True MinimumReplicasAvailable

OldReplicaSets: <none>

NewReplicaSet: <none>

Events:

  FirstSeen LastSeen Count From SubObjectPath Type Reason Message

  --------- -------- ----- ---- ------------- -------- ------ -------

  26m 26m 1 deployment-controller Normal ScalingReplicaSet Scaled up replica set docker-python-app-2874657604 to 1

  26m 26m 1 deployment-controller Normal ScalingReplicaSet Scaled down replica set docker-python-app-3657222991 to 0

  5m 5m 1 deployment-controller Normal ScalingReplicaSet Scaled up replica set docker-python-app-2874657604 to 3

**Load Balancing Kubernetes**

Show the service hit by the URL

kubectl logs docker-python-app-2874657604-3h5j4

minikube stop